AMENDMENTS TO THE CLAIMS

1. (Original) A method for managing interference in a radio communications network, comprising the steps of:

receiving an aggregated radio signal at a first node in the radio communications network on a plurality of frequencies;

determining a power level for the aggregated radio signal for each frequency in the plurality frequencies;

subtracting the power level for each the frequency from a power limit to produce a power differentials for thee each frequency; and

instructing a second node in the radio communications network to avoid using a transmission frequency corresponding to a non-positive power differential in the plurality of power differentials to transmit to the first node.

2. (Original) The method of claim 1, further comprising the steps of: receiving a transmission from the second node in the radio communications network; and discarding any portion of the transmission carried on the transmission frequency.

3. (Original) The method of claim 1, wherein the step of determining a power level is carried out by:

acquiring a plurality of instantaneous power level measurements for each the frequency; and

calculating an average power level based on the plurality of instantaneous power level measurements.

4. (Original) The method of claim 1, wherein the step of determining a power level is carried out by:

acquiring a plurality of instantaneous power level measurements for the each frequency; and

calculating a median power level based on the plurality of instantaneous power level measurements.

5. (Original) The method of claim 2, wherein the discarding step comprises applying a filter to the transmission.

6. (Original) The method of claim 1, further comprising the step of: sending to the second node a request to adjust a transmission power level on a frequency corresponding to a positive power differential in the plurality of power differentials.

7. (Original) The method of claim 1, further comprising the step of: instructing a plurality of other nodes in the radio communications network to avoid using the transmission frequency to transmit information to the first node.

8. (Original) The method of claim 7, further comprising the steps of:

receiving a transmission from one of the plurality of other nodes; and

discarding any portion of the second transmission carried on a frequency corresponding to a non-positive power differential in the plurality of power.

9. (Original) The method of claim 8, further comprising the step of: sending to the one of the plurality of other nodes a request to adjust a transmit power level on a frequency corresponding to a positive power differential in the plurality of power differentials.

10. (Original) The method of claim 1, further comprising the steps of:

determining an updated power level for the aggregated radio signal for each frequency in the plurality frequencies;

subtracting the updated power level for each the frequency from the power limit to produce a plurality of updated power differentials; and

instructing the second node to avoid transmitting to the first node on a frequency corresponding to a non-positive updated power differential in the plurality of updated power differentials.

11. (Original) The method of claim 1, further comprising the steps of:

generating an optimal waveform profile based on the plurality of power differentials; and

reporting the optimal waveform profile to the second node.

12. (Original) The method of claim 11, wherein the reporting step is carried out using a common network configuration channel.

13. (Original) The method of claim 11, further comprising the step of compressing the optimal waveform profile prior to performing the reporting step.

14. (Original) The method of claim 11, wherein the optimal waveform profile specifies a waveform pattern.

15. (Original) The method of claim 14, wherein the waveform pattern defines a transmission signal having a power spectral density that varies over time.

16. (Original) The method of claim 14, further comprising the steps of:

generating a second optimal waveform profile based on the plurality of power differentials; and

reporting the second optimal waveform profile to a third node in the radio communications network; wherein the second optimal waveform profile specifies a second waveform pattern that is orthogonal to the waveform pattern.

17. (Cancelled)

18. (Cancelled)

19. (Original) The method of claim 1, wherein the plurality of frequencies comprises all of the frequencies in a radio frequency band.

20. (Original) The method of claim 1, further comprising the steps of: associating a unique pattern with the second node; and determining whether the transmission contains the unique pattern.

21. (Original) A method for managing interference in a radio communications network, comprising the steps of:

receiving at a first node in the radio communications network an instruction transmitted from a second node in the radio communications network to avoid using a plurality of frequencies to transmit to the second node;

filtering a transmission signal to remove power from the transmission signal at each frequency in the plurality of frequencies; and

transmitting the transmission signal to the second node.

22. (Original) The method of claim 21, further comprising the steps of:

receiving an optimal waveform profile from the second node, the optimal waveform profile being based on a plurality of power measurements for the plurality of frequencies and a power limit; and

conforming the transmission signal to the optimal waveform profile prior to performing the transmitting step.

23. (Original) The method of claim 22, further comprising the step of decompressing the optimal waveform profile prior to performing the conforming step.

24-97. (Cancelled)